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Notice of Allowability	Application No.	Applicant(s)	
	10/647,278	CHAI ET AL.	
	Examiner	Art Unit	
	Ling-Siu Choi	1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Preliminary Amendment [3/15/2004 and 8/26/2002003].
2. ☒ The allowed claim(s) is/are 16-22.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/695,915.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date <u>08/26/2003</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

1. This application is a Division of US Application Serial Number 09/695,915, filed october 26, 2000, now US Patent Number 6,642,339, which is a Continuation of PCT/GB00/01611, filed April 26, 2000.

2. This Office Action is in response to the Second Preliminary Amendment filed March 15, 2004. Claims 1-15 were canceled and claims 16-22 have been added. Claims 16-22 are now pending.

Examiner's Amendment

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CAR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Arthur S. Garrett on March 2, 2005.

4. The application has been amended as follows:

In Specification, page 1, line 2, after "2000, ", insert -- now U.S. Patent No. 6,642,339,--;

Claim 16, line 5, change "24" to --21.5--;

line 19, change " \Rightarrow " to -- π --;

line 22, change " $\text{SiR}^*_2\text{SiR}^*_2$ " to -- $\text{SiR}^*_2\text{SiR}^*_2$ --;

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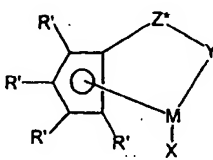
line 22, change " $\text{CR}^*_2\text{SiR}^*_2$ " to -- $\text{CR}^*_2\text{SiR}^*_2$ --.*Allowable Subject Matter*

5. Claims 16-22 are allowed.

6. The following is an examiner's statement of reasons for allowance:

The present claims are allowable over the closest references: Cady et al. (WO 97/44371).

A process to prepare copolymers of ethylene and C_{3-10} α -olefin in the presence of

catalyst system		a metallocene
		
		a borate
		a support
the resulting copolymers of ethylene / C_{3-10} α -olefin having		
a	density	0.900 to 0.940
b	apparent M_w / M_n	2-3.4
c	I_{21} / I_2	16 to <u>21.5</u>
d	activation energy energy of flow	28 to 45 kJ / mol
e	$E_a(\text{HMW}) / E_a(\text{LMW})$	> 1.1
f	$g'(\text{HMW}) / g'(\text{LMW})$	0.85 to 0.95

(summary of claim 16)

Cady et al. disclose a process to prepare a polyolefin having 0.01 to 99.99 mole % ethylene and 99.99 to 0.01 mole % of one or more olefin comonomer, the copolymer having (a) density from 0.87 to about 0.96, (b) M_w/M_n from about 2.0 to about 10, (c) $I_{21}/I_2 \geq 24$, and (d) flow activation energy of at least about 8 kcal/mol (claim 7, 11, 12, 14, and 21). Cady et al. further disclose that the copolymer is prepared in the presence of a catalyst comprising a metallocene complex and a co-catalyst, wherein the metallocene complex can be (t-butyl amido)(tetramethyl- η^5 -cyclopentadienyl)dimethylsilanetitanium η^4 -1,3-pentadiene and the catalyst can be supported on a support material (page 20, lines 6-28; claims 26-28; Example 4; claims 34-38). However, Cady et al. do not teach or fairly suggest a process to prepare a copolymer of ethylene and C_{3-10} α -olefin having I_{21}/I_2 in the range from 16 to 21.5.

In light of the above discussion, it is evident as to why the present claims are patentable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

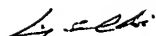
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

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David Wu, can be reach on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

March 4, 2005